Material and Performance Specification Sheet

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A tensar Company

SC250 Turf Reinforcement Mat

The composite turf reinforcement mat (C-TRM) shall be a machine-produced mat of 70% straw and 30% coconut fiber matrix incorporated into a permanent three-dimensional turf reinforcement matting. The matrix shall be evenly distributed across the entire width of the matting and stitch bonded between a heavy duty UV stabilized netting with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings, an ultra heavy UV stabilized, dramatically corrugated (crimped) intermediate netting with 0.5 x 0.5 inch (1.27 x 1.27 cm) openings, and covered by an heavy duty UV stabilized nettings with 0.50 x 0.50 inch (1.27 x 1.27 cm) openings. The middle corrugated netting shall form prominent closely spaced ridges across the entire width of the mat. The three nettings shall be stitched together on 1.50 inch (3.81cm) centers with UV stabilized polypropylene thread to form a permanent three-dimensional turf reinforcement matting.

The SC250 shall meet requirements established by the Erosion Control Technology Council (ECTC) Specification and the US Department of Transportation, Federal Highway Administration's (FHWA) *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects, FP-03 Section 713.18 as a type 5A, B, and C Permanent Turf Reinforcement Mat.*

Installation staple patterns shall be clearly marked on the turf reinforcement matting with environmentally safe paint. All mats shall be manufactured with a colored thread stitched along both outer edges (approximately 2-5 inches [5-12.5 cm] from the edge) as an overlap guide for adjacent mats.

Material Content		
Matrix	70% Straw / 30% Coconut fibers	0.35 lbs/yd^2 (0.19 kg/m^2) / 0.15 lbs/yd^2 (0.08 kg/m^2)
Nettings	Top and Bottom, UV stabilized Polypropylene	5 lb/1000 ft^2 (2.44 kg/100 m^2)
	Middle, corrugated UV stabilized Polypropylene	24 lb/1000 ft^2 (11.7 kg/100 m^2)
Thread	Polypropylene, UV stabilized	

SC250 is available in the following roll sizes:

Width	6.5 ft (2.0 m)
Length	55.5 ft (16.9 m)
Weight ± 10%	34 lbs (15.42 kg)
Area	40.0 yd^2 (33.4 m^2)

Index Value Properties:

Property	Test Method	Typical	Net Only
Thickness	ASTM D6525	0.72 in (18.3 mm)	0.48 in
Resiliency	ASTM 6524	95.2%	---
Density	ASTM D792	0.53 oz/in^3	---
Mass/Unit Area	ASTM 6566	17.88 oz/yd^2 (606 g/m^2)	---
Porosity	ECTC Guidelines	99%	---
Stiffness	ASTM D1388	222.65 oz-in	---
Light Penetration	ECTC Guidelines	8.9%	---
UV Stability	ASTM D4355/ 1000 hr	100%	100%
Tensile Strength MD	ASTM D6818	620 lbs/ft (9.05 kN/m)	655 lbs/ft
Elongation MD	ASTM D6818	35%	25%
Tensile Strength TD	ASTM D6818	737 lbs/ft (10.75 kN/m)	666 lbs/ft
Elongation TD	ASTM D6818	16%	16%

Bench Scale Testing* (NTPEP):

Test Method	Parameters	Results
ECTC Method 2 Rainfall	50 mm (2 in)/hr for 30 min	SLR** = 18.25
	100mm (4 in)/hr for 30 min	SLR** = 20.97
	150 mm (6 in)/hr for 30 min	SLR** = 22.74
ECTC Method 3 Shear Resistance	**Shear at 0.50 inch soil loss**	**7.7 lbs/ft^2**
ECTC Method 4 Germination	Top Soil, Fescue, 21 day incubation	523% improvement of biomass

* Bench Scale tests should not be used for design purposes

** Soil Loss Ratio = Soil loss with Bare Soil/Soil Loss with RECP (soil loss is based on regression analysis)

Updated 3/09

Performance Design Values:

Maximum Permissible Shear Stress		
	Short Duration	Long Duration
Phase 1 Unvegetated	3.0 lbs/ft^2 (144 Pa)	2.5 lbs/ft^2 (120 Pa)
Phase 2 Partially Veg.	8.0 lbs/ft^2 (383 Pa)	8.0 lbs/ft^2 (383 Pa)
Phase 3 Fully Veg.	10.0 lbs/ft^2 (480 Pa)	8.0 lbs/ft^2 (383 Pa)
Velocity Unveg	9.5 ft/s (2.9 m/s)	
Velocity Veg.	15 ft/s (4.6 m/s)	

Slope Design Data: C Factors			
	Slope Gradients (S)		
Slope Length (L)	≤ 3:1	3:1 – 2:1	≥ 2:1
≤ 20 ft (6 m)	0.0010	0.0209	0.0507
20-50 ft	0.0081	0.0266	0.0574
≥ 50 ft (15.2 m)	0.0455	0.0555	0.081

Roughness Coefficients- Unveg.	
Flow Depth	Manning's n
≤ 0.50 ft (0.15 m)	0.040
0.50 – 2.0 ft	0.040 – 0.012
≥ 2.0 ft (0.60 m)	0.011

Product Participant of: QDOR Performance Verified